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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/910,936

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Amit S. Phadnis

CSCO-006/2879

3554

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7590

06/07/2006

LAW FIRM OF NAREN THAPPETA  
C/O LONDON IP, INC.  
1700 DIAGONAL ROAD, SUITE 450  
ALEXANDRIA, VA 22314

EXAMINER

NGUYEN, BRIAN D

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/910,936

Applicant(s)

PHADNIS ET AL.

Examiner

Brian D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The affidavits filed on 2/14/06 under 37 CFR 1.131 is sufficient to overcome Cunningham reference.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 8, 14, and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Nowhere in the specification describes a plurality of physical ports or each of the plurality of physical ports being coupled to a corresponding one of a plurality of communication paths.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 8-9, 14-15, and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by both Cunningham et al (6,888,837) and Luciani (6,331,984).

Regarding claim 1, 8, and 14, Cunningham and Luciani both disclose a method and a gateway device (NAT 102 in Cunningham and switch 130, 140, 150 in Luciana) comprising a plurality of ports (see figure 1 in Cunningham and Luciana), each of the plurality of ports being coupled to a corresponding one of a plurality of communication paths providing connection with a corresponding network (see networks in figure 1 of Cunningham and Luciani), the gateway device comprising: means for searching enabling the retrieval of both a forwarding information (port) and a network address translation (NAT) information necessary for processing the packet in a single search operation (see table in figure 2D of Cunningham and table in figure 2 of Luciani), wherein the NAT information specifies a new address for an original address in the packet, and the forwarding information specifying one of the plurality of ports (see destination/translated destination ports in Cunningham and port 205 in Luciana) for forwarding the packet; means for receiving the packet containing the original address; means for determining the routing information and the NAT information for the packet by using the single search (see figure 2D in Cunningham and figure 2 in Luciana); means for substituting the new address for the original address in the packet (see global address in figure 2D of Cunningham and figure 2 of Luciana); and means for forwarding the packet with the new address on the specified one of the plurality of ports (the packet is forwarded according to figure 2D of Cunningham and figure 2 of Luciana).

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Regarding claims 2, 9, and 15, Cunningham and Luciani discloses a single table for both the routing and the NAT information (see table in figure 2D of Cunningham and table in figure 2 of Luciani).

Regarding claims 20-21, Cunningham and Luciani discloses a gateway device (see NAT 102 in figure 1 of Cunningham and switch 130, 140, 150 in figure 1 of Luciani) for processing a packet, the gateway device comprising: a plurality of ports (see figure 1 in Cunningham and Luuciana), each of the ports being coupled to a corresponding one of a plurality of communication paths proving connection with a corresponding network (see networks in the figures); a memory unit (see table in figure 2D of Cunningham and table in figure 2 of Luciani) storing a forwarding information (port) and a network address translation (NAT) information necessary for processing the packet, wherein the NAT information specifies a new address for an original address in the packet (see addresses in figures 2D and 2), and the forwarding information specifying one of the plurality of ports for forwarding the packet (see ports in figures 2D and 2); an inbound interface receiving the packet containing the original address; a forwarding and NAT block determining the routing information and the NAT information for the packet using a single search (see single table in figure 2D and 2), the forwarding and NAT block substituting the new address for the original address in the packet (see global address); and an outbound interface forwarding the packet with the new address on the specified one of the plurality of ports, wherein the memory unit stores the routing information and the NAT information in a single table (see table in figure 2D of Cunningham and table in figure 2 of Luciana).

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-4, 7, 10-13, 16-17, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over both Cunningham and Luciani in view of McClure (6,496,439) and Michels et al (6,678,269).

Regarding claims 3-4, 7, 10-13, 16-17, and 22-23, both Cunningham and Luciani discloses all the claimed subject matter as described in previous paragraph except for the table uses a content addressable memory (CAM) and the search key includes network addresses. However, these features are well known in the art. McClure discloses the use of CAM to store translation tables (see col. 1, lines 40-41) and Michels discloses the search key includes network addresses (see col. 4, lines 17-20 and col. 6, lines 1-4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the CAM as taught by McClure and the search key include the addresses as taught by Michels to meet the design criteria of a particular implementation.

8. Claims 5-6, 18-19, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over both Cunningham and Luciani in view of Michels et al (6,678,269).

Regarding claims 5, 18, and 24, Cunningham and Luciani does not specifically disclose the gateway device comprises a service selection gateway connecting to a plurality of service domains and storing NAT information and forwarding information in a plurality of tables

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portioned according to service domains such that forwarding information and Nat information related to the same service domain is stored in the same one of the plurality of tables. However, these features are well known in the art. Michels discloses a switching device (gateway) connecting to a plurality of service domains (12, 14, 16 of figure 1A), each service domain includes a table (42, 44, 46 of figure 2) for storing the information relating to that service domain. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use different table for different service domain as taught by Michels in the system of Cunningham and Luciani in order to reduce the size of the table and the search time.

Regarding claims 6, 19, and 25, Cunningham and Luciani does not specifically disclose at least one table can store the information related to at least a first service domain and a second service domain contained in the plurality of service domains, the first and second service domains containing a first set of addresses and a second set of addresses accessible from the gateway device, wherein the first and second set of addresses do not overlap. However, Michels discloses one table can be used to store at least two service domain wherein the address spaces accessible in the at least two of the service domains do not overlap (see table 90 in figure 5 where domains 0-3 stored the information). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a single table to store at least two service domains as taught by Michels in the system of Cunningham and Luciani in order to effectively use of memory to store table entries for all the service domains.

Regarding claim 26, Michels discloses a service selection block (packet analysis 34) determining a specific service to which the packet relates to and causes the packet to be

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processed according to a corresponding one of the plurality of tables (42, 44, 46 of figure 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the service selection block as taught by Michels in the system of Cunningham and Luciani in order to provide the specific service to the packet.

Regarding claim 27, Michels discloses a plurality of forwarding and NAT blocks (36, 38, 40) wherein each of the plurality of forwarding and NAT blocks is coupled to a corresponding one of the memory units, wherein each memory unit stores one of the plurality of tables (42, 44, 46). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use separate blocks/memories for each service as taught by Michels in the system of Cunningham and Luciani so that different searching can be performed simultaneously on different memories.

### ***Response to Amendment***

9. Applicant's arguments filed 2/14/06 have been fully considered but they are not persuasive.

The applicant argued that the term port of Luciana does not participate a physical port as recited in currently amended claim 1. This argument is not persuasive because the specification does not describe **physical** ports. The port described in the specification is merely used for forwarding the packet that is performing the same function as the port of Luciana.

### ***Conclusion***

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D. Nguyen whose telephone number is (571) 272-3084. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



5/30/06

**BRIAN NGUYEN**  
**PRIMARY EXAMINER**